ILLINOIS POWER COMPANY
Response to
"Illinois Commerce Commission Assessment of Illinois Power Company
1999 Reliability Report For the 1999 Period"
Docket 01-0345

The following response is provided by Illinois Power Company pursuant to the Order in Docket No. 01-0345, adopting the reliability performance report titled "Illinois Commerce Commission Assessment of Illinois Power Company Reliability Report for The 1999 Period" (January 22, 2001).

In the assessment of IP's 1999 Reliability Report, the Commission concludes that, "IP's 1999 reported reliability indices indicate a significant improvement in reliability from 1998 and from the trend in recent years. The amount of actual reliability improvement, however is not clear".

IP has implemented significant initiatives over the last few years to enhance delivery system reliability. Recent information, provided in the following responses, demonstrates that the reliability of IP's delivery system has trended upward, both in real terms and as a result of modifying the reporting characteristics of IP's Trouble Outage System ("TOS") to more accurately record outage information. The Company trusts this response will provide assurance to the Commission that the initiatives already implemented and planned will provide greater electric reliability at a reasonable price.

"Summary of Recommendations" Responses

- Summary of Recommendations, p. 16 – "First, Illinois Power should do everything necessary to get up to date with tree trimming. The Commission recommends that IP be back on a four year tree trimming cycle no later than December 31, 2002."

    - Executive Summary, p. iii – "Illinois Power should do whatever is necessary to catch up with the four-year tree trimming cycle."

    - Executive Summary, p. iii – "IP should expedite its tree trimming to get back to its policy of a four year trim cycle by the end of 2002."

    - Illinois Power's Historical Performance Relative to Established Reliability Targets, p. 5 – "The Commission urges IP to increase its efforts to catch up on tree trimming"

    - Potential Reliability Problems and Risks, p. 15 – "Illinois Power has not provided any analysis to justify changing its tree trimming goal."

♦ **IP Response**

With respect to the Commission's findings that Illinois Power needs to achieve a four-year tree trimming cycle by the end of 2002 and has not provided any analysis to justify changing its tree trimming goal, the Company respectfully responds to the above findings with the following facts:

1) The Company continues to have less than 5.0% (58 out of 1,239) of its electric distribution circuits with trim cycle lengths in excess of four years. Although the number of circuits with trim cycle lengths in excess of four years has remained relatively constant from 1999 to 2000, the cycle length of circuits in excess of four years has been reduced overall. The reduction in the average trim cycle period, discussed below, is the result of IP trimming the longest cycle circuits first. Illinois Power anticipates that all electric distribution circuits will have tree trimming cycles equal to four years or less by the end of the year 2002.
2) An analysis of the trim cycle periods for all circuits resulted in an average trim cycle period of 4.0 to 4.5 years and indicates positive movement toward achieving a four-year tree trimming cycle.
3) IP has determined that the current funding level is appropriate for the achievement of a four-year tree trimming cycle by the end of the year 2002. The Company has continued to enhance its vegetation management program, and IP is on track to achieve a four-year circuit trimming schedule by the end of 2002. In 1999, the Company changed contractors resulting in greater efficiencies. This change, along with IP's tree trimming practices, has resulted in significantly more trees being trimmed annually. The Company also conducts aerial patrols of transmission lines in the spring and summer of each year to ensure appropriate vegetation clearance.
4) IP has determined that a four-year tree trimming cycle is consistent with industry practices and provides acceptable electric service safety and reliability in the most cost efficient manner.

- Summary of Recommendations, p. 16 – "Second, Illinois Power should address and fix the problems which result in more than 25% of the controllable customer interruptions in 1999 being caused by accidents, dig-ins, and "human error" made by IP personnel and IP contractors."

    - Executive Summary, p. i – "Also notable in IP's 1999 report are… as well as a high incidence of interruptions caused by accidents and errors made by IP employees and contractors. The Commission recommends that IP address and fix these problems on an expedited basis."

- Executive Summary, p. iii – "IP should address and fix the problems which result in more than 25% of the controllable customer interruptions in 1999 being caused by accidents, dig-ins, and "human error" made by its own personnel and contractors."

- Assessment of Illinois Power's 1999 Reliability Report, p. 2 – "Also notable in IP's 1999 report are …a high incidence of interruptions caused by accidents and errors made by IP employees and contractors (12.90% of all controllable system outages and 25.04% of all controllable customer interruptions)….The Commission recommends that IP address and fix these problems on an expedited basis."

- Illinois Power's Historical Performance Relative to Established Reliability Targets, p. 5 – "The Commission urges IP to fix the problems underlying this high percentage of employee-caused interruptions."

- Potential Reliability Problems and Risks, p. 15 – "An unusually large number of customer interruptions seem to be caused by the actions or errors of IP employees and IP contractors. IP needs to investigate the root causes for these problems and implement training and whatever other steps are needed to make substantial improvements in this area."

♦ **IP Response**

The number of controllable interruptions caused by accidents and errors made by IP employees and contractors for 2000 was 13% and is down 2% compared to 1999. The number of controllable customer interruptions in 2000 was 14%, down 7% when compared with 1999. The number of controllable tree related interruptions was 11% in 2000, which is down 2% from 1999.

In addition, the total number of controllable interruptions recorded in 2000 was 23,027 and represents only 5 % of the total number of interruptions (both controllable and uncontrollable). The number of controllable customer interruptions recorded in 2000 was 4% of the total customer interruptions and was down 4% from 1999 levels.

IP is proactively addressing the situation by initiating the following activities: 1) re-affirming the importance of the proper operation and care of the Company's electric distribution system and the need for diligence in working near existing facilities with IP's first line field supervision (held on June 13, 2001), 2) developing the training material and providing the training for all electric employees by the end of the third quarter of 2001, and 3) including in this training a review of the Company's outage causes and the importance of proper outage identification.

- Summary of Recommendations, p. 16 – "Third, Illinois Power should do a better job of following through on planned actions to improve the performance of worst performing circuits and in describing the completed actions and planned actions in its annual reliability report."

    - Executive Summary, p. iii – "Some of the planned work on worst performing circuits from prior years has clearly been accomplished. However, IP generally did a poor job of describing completed actions from the prior year's plan, which may also mean that few of the planned actions were actually done. IP needs to do a better job of following through on planned actions to improve worst performing circuits and in describing the completed and remaining planned actions."

    - Executive Summary, p iii – "IP should do a better job of following through on planned actions to improve worst performing circuits and in describing the completed and remaining planned actions in its reliability report."

    - Review of Illinois Power's Implementation Plan for the Previous Reporting Period, p. 15 – "Generally, IP did a poor job of describing completed actions from the prior year's plan, which may also mean that few of the planned actions were actually done. IP needs to do a better job of following through on planned actions to improve the performance of worst performing circuits and in describing the completed actions in its annual reliability report, as well as actions still planned for those circuits."

♦ **IP Response**

The identification of IP's worst performing circuits ("WPC") has been a functional responsibility of the central staff group within the Energy Delivery department. However, it has been the responsibility of local Area field management to analyze the root causes of the performance of WPCs, develop remedial plans, and report the completed work, and associated costs. In order to heighten focus on analysis, remedial alternative development and reporting of completed work, a formal reliability management group has been established. This group will provide overall coordination necessary to ensure appropriate actions are being taken to effectively address customer reliability concerns, and improve system reliability performance while at the same time making the most effective use of Company resources. Currently, these IP resources are gathering information for the ICC Staff and will be able to focus on the above mentioned responsibilities beginning in the third quarter of 2001.

As shown in the "Annual Report for the 2000 Reporting Period, Pursuant to 83 Illinois Administrative Code 411, June 1, 2001" ("2000 Report"), beginning on page 78, Illinois Power discusses the remediation work completed for each of the 1998 and 1999 WPCs and the associated expenditures. In addition, a comparison

of the reliability performance for each WPC is shown for the first year that the circuit was identified as a poor performer and at least one succeeding year.

- Summary of Recommendations, p. 16 – "Fourth, Illinois Power should promptly fix the safety and reliability-related problems on Bloomington Circuit 202."

    - Illinois Power's Historical Performance Relative to Established Reliability Targets, p. 6 – "Bloomington circuit 202 is a 12kV circuit serving … IP needs to not only promptly fix the problems identified on this circuit, but also review and improve its procedures and practices related to circuit inspections generally. In a meeting with Staff in November, 2000, IP outlined a plan to address all of these concerns. Staff will monitor IP's progress in fulfilling this plan."

    ♦ **IP Response**

    As shown on page 84 of the 2000 Report, wind and vehicles caused the majority of "customers interrupted" and "customer minutes interrupted" during 1999 on Bloomington Circuit 202. IP performed a safety patrol in July 2000 which did not indicate a large number of safety related items. In addition, the Company performed a maintenance patrol on Circuit 202 in November 2000. During the patrol, thirty-eight (38) maintenance related items were identified that resulted in a significant number of projects on this circuit including:

    - The replacing of 102 poles on this circuit from December, 2000 through May, 2001
    - The rebuilding of 4300 feet of single phase line southwest of Stanford during the period December, 2000 through February, 2001
    - The reconductoring of 1100 feet of #6 copper primary with replacement of 477 SAC on West Street, Danvers, and
    - The upgrading of 21 sets of oil circuit reclosers and fuses based on a proactive coordination study

    These projects were assigned a work request number and tracked in the Company's Work Management Information System. The work requests were completed between June 2000 and May 2001. The remediation cost for the work described above was in excess of $260,000 in constant 1998 dollars.

- Summary of Recommendations, p. 16 – "Fifth, Illinois Power should address the issue of training its personnel to do a much more careful job of identifying safety and reliability problems when performing circuit inspections."

    - Potential Reliability Problems and Risks, p. 15 – "IP should address the issue of training its personnel to do a much more careful job of identifying safety and reliability problems when performing distribution circuit inspections."

♦ **IP Response**

As outlined in IP's Electric Operating Procedure ("E. O. P") 3.48, Illinois Power Company conducts inspections of all of its distribution circuits at least once every four years. The purpose of these inspections is to identify potential items that could impact the safety of the public as well as Company employees. With the current industry changes and the importance of providing reliable service to customers, IP changed the scope of line inspections in the fourth quarter of 2000.

The criteria scope for distribution circuit patrols was expanded to include identifying any condition that would affect reliability on the circuit being inspected as well as the original safety related items. This change was first implemented for the worst performing circuits and annual patrols identified for 2001.

The revised E. O. P 3.48 now requires that all area distribution circuits be inspected to identify both safety and maintenance deficiencies. Line inspection patrols are performed to provide area supervision with the identification of any deficiencies having a direct impact on the circuit's reliability performance. The criteria scope expansion does increase the focus on reliability related issues, however, the intent of the inspection continues to ensure the safety of both the general public and Company employees.

Listed below are examples of items inspected for deficiencies that may have a direct impact on reliability of the circuit.

Reliability/Safety Items

- Insulators – broken/floating
- Guy Wires – broken/loose/missing
- Poles – rotted/split/broken
- Conductors – frayed/broken/sagging
- Attachments – broken or loose tie wires/loose bolts or pins?
- Cross-arms – rotted/split/wood pins down
- Pole Mounted Equipment – leaking/damaged/flashed insulators/ animal guards
- Woodpecker Holes – repairable/assess pole strength
- Ground Wires – loose/broken/covered at ground line
- Arrestors – blown/loose/verify correct number on line
- Clearances – adequate clearances between conductors/non-utility attachments/new or existing structures/driveways/field entrances
- Tree Conditions – trimming required/ dead or dying trees in vicinity of lines
- Underground ("UG") Equipment – transformers or pedestals locked/ internal checks for snakes, animals or ants/digging

activities in area/pedestal covers intact/loops open (per procedures)/arrestors installed on open points

In February 2001, all Electric Operations Supervisors ("EOS") were trained on the revised circuit patrolling procedure. Each EOS trained the appropriate personnel performing inspections in their respective areas and documented the date of training and the individuals receiving the training. All area training was completed by June 2001.

- Summary of Recommendations, p. 16 – "Sixth, Illinois Power should address the issue of training its personnel to correctly identify and record outage causes, including differences between weather and tree related outages."

  - Executive Summary, p. iii – "IP should address the issue of training its personnel to correctly identify and record outage causes, including differences between weather and tree related outages."

  - Assessment of Illinois Power's 1999 Reliability Report, p. 2 – "There are problems and discrepancies about the causes of controllable customer interruptions in IP's 1999 report, however, which indicate that more training and attention to detail in reporting customer interruption information is still needed."

  - Potential Reliability Problems and Risks, p. 15 – "IP should also address the issue of training its personnel to correctly identify outage causes, including differences between weather and tree related outages."

  - Illinois Power's Historical Performance Relative to Established Reliability Targets, p. 4 –"IP needs to do a much better job of identifying the true causes of system outages and customer interruptions."

♦ **IP Response**

The Company continues to focus on the issue of training and the ability to correctly identify and record outage causes including a significant focus on the difference between weather and tree related outages. Illinois Power defines tree related outages as outages caused by a tree growing into a line producing a non-correcting fault or a portion of the tree falling onto a line under non-severe weather related conditions producing a non-correcting fault resulting in customers being out of service. A tree falling onto a line due to severe weather conditions is classified in the weather category because the tree contact would not have happened in the absence of severe weather. Illinois Power personnel utilize these definitions to correctly record system outages in TOS for these and many other cause categories.

The Company has a formal quality and assurance ("QA") process that begins with the initial reporting of the outage and its entry into TOS by the dispatcher upon communication with local area personnel as the restoration process gets underway. The next activity involves the generation of area specific reports of outage information from TOS for review by the appropriate field personnel. The third and final activity involves the review and challenge to area personnel from dispatch supervision to ensure that the outage information, including the cause, has been reviewed for appropriateness.

Illinois Power has developed a formal training program spanning 12 weeks which includes development of a strong understanding of the Company's field operations related to: 1) scope of work, 2) crew job requirements, 3) equipment needs and 4) expected normal duration time for all types of work. In addition, training is provided so that the dispatcher develops an understanding of emergency storm procedures, including a heavy focus on the Trouble Outage System and the outage causes and system codes, thereby enabling the dispatcher to comply with those procedures during emergency storm situations.

The Company also plans to provide "refresher" field personnel training before December 31, 2001 including a review of the definitions above with a focus on the importance of providing an accurate description of the outage cause, i.e., recognizing the difference between a tree falling on a line in a storm versus a tree contacting a line when there is no storm.

Specific Areas of Concern Responses

- Executive Summary, p. i – "Illinois Power's first report pursuant to 83 Illinois Administrative Code Part 411 ("Part 411"), for the calendar year 1998, had a number of shortcomings. These included misleading statistics due to problems with the company's Trouble Outage System (TOS) and the operation of that system. In its 1999 report, IP indicated that it has developed a new TOS reporting tool that enables more accurate reporting of its reliability indices. While this is a very positive step, there is still evidence that IP is not accurately reporting causes for the outages."

    - Executive Summary, p. ii – "IP's 1999 reported reliability indices indicate a significant improvement in reliability from 1998 and from the trend in recent years. The amount of actual reliability improvement, however, is not clear."

    - Executive Summary, p. ii –"In its 1999 report, IP states that the 'total number of customer interruptions decreased 40% in 1999 relative to 1998'. IP also describes the effect of a new outage reporting tool developed in 1999 that enables it to more accurately report its reliability indices. IP further states 'The past reporting tool inaccurately included active customers and sometimes double counted customers in an outage. Therefore, we have been over reporting our numbers in the past.' Because of the over-reporting of outages

in prior years, it is not clear how much of the 1999 improvement in reliability indices actually reflects an improvement in reliability."

- Assessment of Illinois Power's 1999 Reliability Report, p. 2 – "In last year's ICC assessment report (for year 1998), it was noted that problems with IP's Trouble Outage System had caused misleading statistics to be reported. In its 1999 Reliability Report, IP reported that it developed a new TOS reporting tool in 1999 that enables more accurate reporting of its reliability indices. The former reporting tool inaccurately included inactive customers and sometimes double counted customers interrupted as a result of a system outage. Therefore, IP claims that it has been over reporting its numbers in the past and implies that this problem has been corrected."

- Trends in Illinois Power's Reliability Performance, p. 13 – "The Commission finds that, overall, the statistics provided in IP's 1999 reliability report indicate significant improvement in reliability when compared to recent past years. Because of differences in how the reliability indices were determined year to year, differences in how the basic outage data was recorded and reported year to year, and some credibility problems with data in the 1999 report, it is not clear how much of the indicated reliability improvement is real."

♦ **IP Response**

TOS was created in 1992 and has evolved since that time to the state of the art system it is today. System and process enhancements include the ability: 1) to provide in-depth quality analysis, 2) to collect a snapshot of connected customers, 3) to record customer interruption history at the end of each year, 4) to accurately count interrupted customers by phase, and 5) to track step restoration. The Company's IT systems are unique because:

- Information collected in TOS can be overlaid on system construction information collected in a distribution database ("DDB"), geographical information system ("GIS") circuit maps or any other IP system, enabling quick decision-making.
- IP is able to identify when one branch of its power system has had repeated problems and the cause of the problems. Using this data, IP personnel can quickly determine the best solution due to the connectivity of the models.

- IP systems record interruption data at the customer, phase, device, protective zone, and system level.

The accuracy of TOS and the fact that the system is modeled down to a customer level allow IP to address reliability mitigation on that customer level when necessary. Furthermore, IP has the ability to track outages on a zone of protection basis. By

analyzing the interruption data at the appropriate level, IP can obtain the most benefit for its reliability dollar.

It is widely recognized within the electric utility industry that utilities with very accurate IT systems, similar to IP's TOS system, have higher reliability indices than those utilities with less accurate systems. The major difference usually stems from inaccurate, inconsistent customer counts being recorded on historical, less accurate systems. When a protective device operates, a set number of customers resides beyond that device and is interrupted every time that device opens. Without connected IT systems, utilities often only estimate the number of customers interrupted. Connected systems provide an accurate count of the number of customers affected. Through various forums such as Institute of Electronic and Electrical Engineers ("IEEE") /Edison Electric Institute ("EEI") meetings, utilities have reported experiencing an increase in reliability indices of approximately 25 percent after more accurate systems were placed in service. In a worst-case scenario, indices increased 75 percent. The change in indices was solely attributable to the change in IT systems. During such system conversions, utility spending on reliability-related initiatives remained constant.

As shown in the table below and provided in the Company's "Annual Report for the 2000 Reporting Period", the performance of the 1999 WPCs has improved significantly as a result of the actions, associated projects undertaken and investment made by IP to improve the reliability on these circuits. For each WPC, the 1999 performance (shown in "bold black") is compared to the 2000 performance (shown in "bold red"). For each index that resulted in a circuit being identified as a WPC, the performance for that specific index has improved significantly and this improvement is not solely the result of any "refinement" in outage data reflected in the Company's TOS. As referenced above, indices increased with more accurate systems while the table below indicates that the WPC indices have <u>decreased</u> thereby reflecting an <u>increase</u> in reliability.

1999 Worst Performing Circuits			1999 Performance			2000 Performance		
Area Name	Area	Circuit	SAIFI	CAIDI	CAIFI	SAIFI	CAIDI	CAIFI
Belleville	51	222	**4.18**	144	**4.18**	**1.53**	202	**1.99**
Bloomington	31	202	**4.11**	219	**4.11**	**1.67**	410	**1.83**
Champaign	32	116	0.98	62	**12.56**	1.76	136	**2.13**
Champaign	32	541	0.35	**753**	1.09	0.07	56	1.00
Decatur	35	128	**5.49**	96	**5.49**	**1.72**	109	**1.86**
Decatur	35	161	**3.92**	133	**4.49**	**0.82**	81	**1.09**
Decatur	35	215	0.09	**673**	1.39	0.00	0	0.00
Granite City	64	296	**4.15**	84	**4.15**	**2.05**	108	**2.11**
Hillsboro	66	812	**4.36**	144	**5.08**	**2.74**	116	**2.89**
Jacksonville	36	110	0.06	**787**	1.52	0.05	**393**	1.00
Jacksonville	36	331	**4.09**	500	4.09	**0.75**	101	2.15
Maryville	51	293	0.47	**658**	1.00	0.75	**284**	1.48
Mt. Vernon	72	104	0.14	**1163**	1.00	1.06	**135**	1.10
Mt. Vernon	72	112	0.10	**716**	1.00	0.92	**76**	1.14
Mt. Vernon	72	156	0.13	**817**	1.00	0.26	**180**	1.00
Sparta	73	904	0.04	**1072**	1.11	0.03	**294**	1.00
Sparta	73	915	**4.64**	215	**4.64**	**1.52**	115	1.57
Sparta	73	916	**7.85**	188	**7.85**	**1.79**	147	1.96
Sparta	73	928	1.05	**1292**	1.07	0.12	**97**	1.11
Sparta	73	934	**4.36**	214	**4.36**	**0.57**	128	**1.62**
Sparta	73	935	1.23	**672**	1.26	0.03	**192**	1.27

- Executive Summary, p. 1 – "Table 1 below shows Illinois Power's system wide reliability statistics for 1999 compared to other Illinois electric utilities."

  ♦ **IP Response**

  Year-to-year comparisons of one company's system to another are a popular vehicle by which to assess the relative performance. In today's environment, IP believes company-to-company comparisons are of very limited use. Differences between the nature of each company's service territory and the design and construction of its electric system negate the validity of these inter-company comparisons. Similarly, the sophistication of the information systems employed to identify, track and report interruption data affect the comparability of data. Finally, simple differences in definitional issues between companies can seriously compromise conclusions drawn based upon these comparisons.

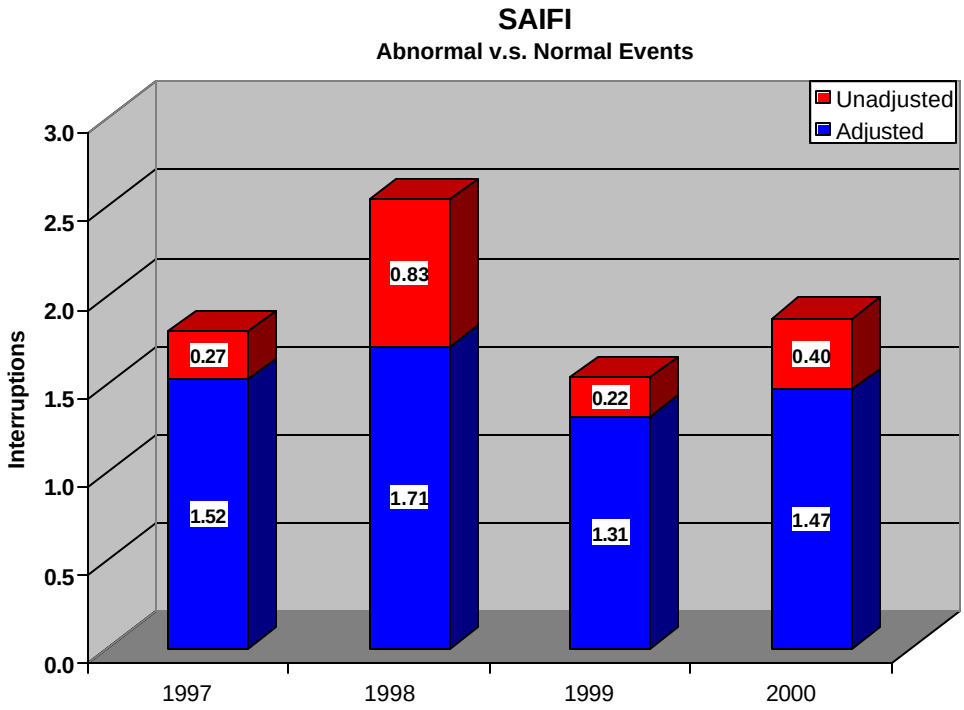
  IP believes the comparison of one company's year-to-year performance has proven to be a more accurate portrayal of a company's performance. The key to

such a comparison is to ensure that uncontrollable variables have been identified and excluded prior to the analysis. Factors such as weather can significantly impact reliability indices from year to year. To develop a true comparison of the year-to-year performance of the company's system, uncontrollable variables such as weather should be excluded.

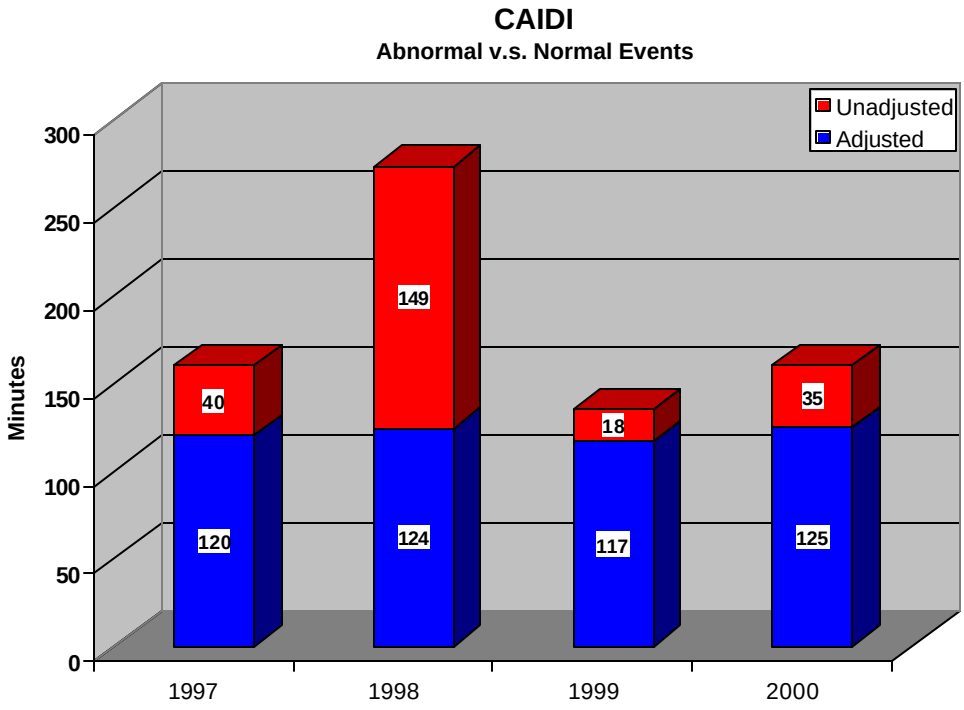
IP's electric distribution system performance, as reported including all variables, has experienced varying levels of reliability. Without excluding the impact of uncontrollable variables on these indices, flawed business and regulatory conclusions, and poor investment choices can be made. Monitoring normalized indices provides a more accurate indication of the Company's reliability performance over a period of time.

The IEEE has proposed an approach by which to classify all interruptions as either "normal" or "abnormal." This approach is currently being investigated by the IEEE Working Group on System Design as a way to compare utilities without specifically excluding weather. Abnormal events are defined as events that exceed normal operating conditions, which are defined by reviewing a utility's past performance. The concept is that utilities plot their events to establish a base line for "normal". This baseline will be reviewed over time to ensure that system health is not degrading. The IEEE is proposing a plan that will encourage significant regulatory reporting for any event that exceeds "normal" and was under that utility's control. One goal of this approach is to construct a methodology that ensures a clear picture of degrading system health. If the number of abnormal events rises significantly over time, then it will be clear that there are other systemic issues that require additional investigation.

After abnormal events are identified using the above-described methodology, adjusted indices are compared to unadjusted indices. As can be seen in Figure 1 and Figure 2, IP's reliability performance over time has been relatively constant considering "normal" events using this emerging IEEE methodology. The approach clearly shows the impact of abnormal events on system performance.



• Figure 1. SAIFI Performance Considering Abnormal Days



• Figure 2. CAIDI Performance Considering Abnormal Days

Identifying abnormal events also provides an opportunity for advanced CAIDI/restoration analysis during crisis situations. Segregating abnormal events and reviewing response times can provide insight on crew performance, supply locations, and trigger points for enlisting outside assistance.

Presuming that systems, definitions, and data collection techniques do not materially change, over time the information provided would offer more accurate insights into the performance of IP's distribution system than that available from unadjusted company-to-company comparisons.

- Executive Summary, p. ii – "IP's standards call for installing lightning arresters on all new transformers and at least four lightning arresters per circuit mile. It is not clear to what degree IP retrofits existing circuits with additional lightning arresters, especially in areas which experience a significant number of lightning outages."

  ♦ **IP Response**

  IP is taking a proactive approach to lightning analysis. A key component in lightning mitigation is arrester placement. Because arresters are a small dollar item, they are kept in common stock and used as necessary. Historically, no records were kept on exact arrester placement. IP has begun tracking arrester installations through the information delivery system ("IDS") system. By tracking exact location, IP can perform more accurate lightning analysis. IP is also reviewing industry standards to insure that its current lightning protection design is on par with the industry.

  When a WPC has an inordinate amount of lightning caused outages, IP conducts an analysis on that circuit and adds appropriate lightning protection equipment based on the results of that analysis.

Illinois Power Company appreciates the opportunity to provide information responding to recommendations and concerns expressed in the Commission's report.

Response Dated July 2, 2001

Respectfully Submitted

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